Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

In the Matter of:

Amendment of Part 97 of the Commission's Rules Governing the Amateur Radio Services	**)** **)** **)**	**WT Docket No. 04-140**

To: The Commission

COMMENTS OF WILLIAM A. TYNAN, W3XO

Pursuant to Sections 1.415 and 1.419 of the Commission's Rules [47 C.F.R. §§ 1.415 and 1.419], I hereby respectfully submit comments in response to the *Notice of Proposed Rule Making and Order*, FCC 04-79, 69 Fed. Reg. 24996, released April 15, 2004 (the Notice).

1. I have been licensed since 1945 and hold an Extra Class amateur license. I have operated on all amateur bands except 10 MHz (30 meters) from 1.8 MHz through 2304 MHz. For many years, my principal interest has been in the bands above 50 MHz. I am a graduate of Rensselaer Polytechnic Institute and was employed for 36 years by the Johns Hoplins University Applied Physics Laboratory. There, I worked on several U.S. Navy missile programs, including Tomahawk. In 1961, I was a principal in the founding of Washington's first FM stereo broadcasting station, WHFS, Bethesda, Maryland. From 1974 through 1992, I was the editor of the QST column, "The World Above 50 MHz". In 1969, I was one of the founders of the Radio Amateur Satellite Corporation (AMSAT). I served on AMSAT's Board of Directors from 1986 through 2003. From 1991 through 1998, I served as AMSAT's President and as its Board Chairman from 1998 through

October, 2003.

2. In Paragraph 17 of the Notice, the Commission proposes to amend § 97.201(b) of its Rules to allow auxiliary stations to transmit in the 2 meter band. I submit that such a move is unnecessary and is merely being proposed to placate one single amateur equipment manufacturer. To me, this seems entirely inappropriate. If that manufacturer wishes to enable such operation of its equipment, it should build in operability on bands where auxiliary operation is already provided for in the Commission's Rules, such as 222 - 225 MHz. Amateur Radio badly needs more commercial equipment for that band, so the manufacturer would be doing amateurs a service AND providing for the auxiliary station capability they are now seeking through a Rule change. Thus, I see NO justification for the Commission modifying the Rules to suite one manufacturer when that manufacturer could have quite easily solved the problem itself and provided a benefit to Amateur Radio in the process. Nevertheless, if the Commission decides to implement this portion of the Notice, I commend it for restricting such operation from the segment 145.8 to 146.0 MHz, which amateurs have voluntarily agreed to devote to satellite communications. I also commend the Commission for proposing to restrict this type of operation from the portion of the 2 meter band devoted to weak signal work. However, the Commission should be aware that, despite what is stated in the woefully out-of-date ARRL Band Plan, weak signal operation in the 2 meter band is almost exclusively confined to frequencies below 144.3 MHz. If auxiliary operation is to be permitted on 2 meters, it would appear to me that a very appropriate portion would be the segment from 144.31 to 144.47 MHz. I chose 144.47 rather than 144.50 MHz because 144.49 is used extensively in Region 2 for uplink

transmissions to the International Space Station. Specifying 144.31 rather than 144.30 affords protection to the Commission-mandated beacon segment of 144.275 - 144.30. I would also exempt 144.37 - 144.41, as 144.39 is widely used for APRS. Both ISS uplinking and APRS employ FM. In its proposal to allow auxiliary operation in the 2 meter band, the Commission says nothing about potential interference to established operation including potential disruption of communication through coordinated repeaters. I would think that some sort of provision for non-interference to established amateur operation would be a part of any such rule regarding auxiliary operation. In Paragraph 21, the Commission alludes to "existing coordination policies" as being adequate to address any interference which might result from auxiliary operation. Due to the individual, and ad hoc, nature of such operation, this remedy seem unlikely to be effective. I urge the Commission NOT to allow auxiliary station operation in the 2 meter band.

3. In Paragraphs 23 through 25 of the Notice, the Commission proposes to allow spread spectrum (SS) transmission in the entire 6 meter and 2 meter bands in addition to the 1-1/4 meter band as proposed by ARRL. I see no need, or benefit, to such an extension of SS authority. Except for the experimentation being conducted at 2.4 GHz based on IEEE 802.11 technology, amateurs have not utilized the SS authority they already have; and no showing has been made that the bands presently available to it are inadequate or insufficient. Furthermore, equipment for operation on the 70 cm band, where SS is already permitted, is as readily available as that for the 6 meter or 2 meter bands. Opening these additional bands to SS, if that technology should begin to be used extensively, can only result in increased noise floors for those trying to span large distances terrestrially, or via Earth-Moon-Earth (EME). The 1-1/4 meter band is too narrow to even

consider authorizing SS. In some areas of the Country, particularly in California, all repeater channels are in use and so-called remote base stations are using most of the rest of the band. By Commission rule, only 222.0 - 222.15 is exempt from repeater operation. It is this small sliver of spectrum that is readily available to those interested in weak signal, narrow band applications such as CW, SSB and the narrowband digital modes. The 1-4/4 meter band is particularly ill suited to SS operation. Additionally, the type of SS operation the Commission is addressing is not likely to attract much interest compared to the promising high data rate type based on the various IEEE 802.11 standards mentioned earlier. This, of course, requires much wider bandwidths than are available at 6 meters, 2 meters or 1-1/4 meters - bnadwidths available only in the microwave bands. For the reasons cited, I see absolutely no justification for extend SS to bands lower than where it is already permitted. However, if the Commission decides to allow SS in the 6 meter, 2 meter and/or 1-1/4 meter bands as proposed in the Notice, I strongly urge that the same logic be applied to it as is proposed for auxiliary stations, i.e., that SS be restricted from the weak-signal and satellite segments. In the case of the 6 meter band, this is 50.0 to 50.5 MHz. For 2 meters, it is 144.0 - 144.3 and 145.8 - 146.0 MHz. In the case of 1-1/4 meter band, 222.0 - 222.15 MHz. Such restrictions are necessary to keep the noise floor in these segments as low as possible. Some may contend that voluntary arrangements are sufficient to prevent SS operation from interfering with other amateur activities. However, those experiencing interference from SS, not having SS equipment, will not be able to identify the source of interference. All that will be heard will be an increase in noise floor, possibly enough to obliterate weak signals altogether. Likewise, those engaging in SS operation are likely to "live in a world of their own" and not be disposed to check for non-SS activity before

beginning transmissions. If they do, they will likely encounter such activity and, if they refrain from transmitting because of it, will likely never transmit - at least during reasonable hours. For the reasons cited, I urge to Commission NOT to authorize any further extension of SS operating authority.

RESPECTFULLY SUBMITTED,

William A. Tynan, W3XO

June 15, 2004